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Change Record:

Issue 01: Initial Issue

SECTION A: Model PA-34-220T (Seneca V)

A.I. General

Data Sheet No.:	EASA IM.A.090	Issue:	01	Date:	27 June 2006
1. a) Type:		PA-34			
b) Variant:		PA-34-220T (Seneca V)			
2. Airworthiness Category:		Normal Category			
3. Type Certificate Holder:		The New Piper Aircraft, Inc 2926 Piper Drive Vero Beach, Florida 32960 U.S.A.			
4. Manufacturer:		The New Piper Aircraft, Inc 2926 Piper Drive Vero Beach, Florida 32960 U.S.A.			
5. EASA Certification Application Date:		N/A			
6. EASA Type Certification Date:		28 September 2003 (in accordance with EC 1702/2003, Article 2, para. 3. (a))			

A.II. Certification Basis

1. Reference Date for determining the applicable requirements:		Date of application for FAA TC for Model PA-34-220T (Seneca V) 10 April 1995
2. (Reserved)		
3. (Reserved)		
4. Certification Basis:		a) For the basic PA-34-220T (Seneca V) aeroplane the applicable certification basis is FAR 23. For details on the applicable FAR 23 amendments see A.V., note 6. b) For PA-34-220T (Seneca V) aeroplanes equipped with the factory installed Avidyne Entegra System option the additional certification basis for installation specific items only is CS-23 as defined in CRI-A01, issue 1, or later revision (for details on applicable paragraphs see A.V., note 7).
5. Airworthiness Requirements:		a) FAR 23 for the basic PA-34-220T (Seneca V) aeroplane (for applicable amendments see A.II.4) b) FAR 23 and CS-23 for PA-34-220T (Seneca V) aeroplanes equipped with the factory installed Avidyne Entegra System option (for applicable amendments see A.II.4)
6. Requirements elected to comply:		None

7. Special Conditions:
- a) None for the basic PA-34-220T (Seneca V) aeroplane.
 - b) CRI-F01, Protection from the Effects of HIRF
CRI-F02, Protection from the Effects of Lightning Strike;
Indirect Effects,
CRI-F05, Human Factors in Integrated Avionic Systems,
for PA-34-220T (Seneca V) aeroplanes equipped with the
factory installed Avidyne Entegra System option.
8. Exemption: None
9. Equivalent Safety Findings:
- a) None for the basic PA-34-220T (Seneca V) aeroplane.
 - b) CRI-F03, Powerplant Instruments for PA-34-220T
(Seneca V) aeroplanes equipped with the factory installed
Avidyne Entegra System option.
10. Environmental Standards:
- a) Noise: ICAO Annex 16, Volume 1, Chapter 10

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: New Piper Report number VB-1640
For TDD of TCDS relevant changes see note 10.
2. Description: Twin engine reciprocating, all-metal, six-place, unpressurized,
low wing airplane, retractable tricycle landing gear.
3. Equipment: For approved equipment, see applicable AFM/POH, section 6.
(For applicable AFM/POH see A.IV.).
4. Dimensions:
- | | |
|-----------|--------------------------------|
| Span | 11.86 m (38.9 ft) |
| Length | 8.72 m (28.6 ft) |
| Height | 3.02 m (9.9 ft) |
| Wing Area | 19.39 m ² (209 sqf) |
5. Engines:
- 1 Teledyne Continental TSIO-360-RB (LH engine)
 - 1 Teledyne Continental LTSIO-360-RB (RH engine)
- The EASA Engine Type Certification standard includes that of
FAA TCDS E9CE (in accordance with EC 1702/2003, Article 2,
para. 3. (a)).
- 5.1 Engine Limits: For all operations:
38"Hg MAP @ 2600 RPM (220 HP)
- For other powerplant limitations refer to the applicable
AFM/POH, section 2.

6. Propellers:

- 6.1 Propeller 1:
- 1 Hartzell, Hub BHC-J2YF-2CUF, Blade Model FC8459(B)-8R (LH propeller)
 - 1 Hartzell, Hub BHC-J2YF-2CLUF, Blade Model FJC8459(B)-8R (RH propeller)
- Pitch: High $80.0^{\circ} +1.5^{\circ}/-0^{\circ}$, Low $14.6^{\circ} \pm 0.2^{\circ}$, at 0.762 (30") station.
- Diameter: Not over 1.930 m (76.0"), not under 1.905 m (75.0").
No further reduction permitted
- Spinner: Piper P/N 37138-6 Assembly (left hand),
Piper P/N 37138-7 Assembly (right hand).
- Governor: 1 Hartzell hydraulic governor; Model E-3-9 (left),
1 Hartzell hydraulic governor; Model E-3-9L (right); or
1 Hartzell hydraulic governor; Model E-8-9L (right) with
Synchrophaser installation.

Avoid continuous ground operation in cross and tail winds between 1600 and 2100 r.p.m..
Avoid continuous operation between 1900 and 2100 r.p.m. with manifold pressure above 32" Hg.

The EASA Propeller Type Certification standard includes that of FAA TCDS P37EA (in accordance with EC 1702/2003, Article 2, para. 3. (a)).

- 6.2 Propeller 2:
- 1 McCauley, Hub 3AF32C522, Blade Model 82NJA-6 (LH propeller)
 - 1 McCauley, Hub 3AF32C523, Blade Model L82NJA-6 (RH propeller)
- Pitch: Feather $82.1^{\circ} \pm 0.5^{\circ}$, Low $12.6^{\circ} \pm 0.2^{\circ}$, at 0.762 (30") station.
- Diameter: Not over 1.930 m (76.0"), not under 1.905 m (75.0").
No further reduction permitted
- Spinner: Piper P/N 100738-2 Assembly .
- Governor: 1 Hartzell hydraulic governor; Model E-3-9 (left),
1 Hartzell hydraulic governor; Model E-3-9L (right); or
1 Hartzell hydraulic governor; Model E-8-9L (right) with
Synchrophaser installation.

With three-bladed McCauley propellers, this model may be operated without spinner dome and rear bulkhead.

The EASA Propeller Type Certification standard includes that of FAA TCDS P57GL (in accordance with EC 1702/2003, Article 2, para. 3. (a)).

7. Fluids:

- 7.1 Fuel: 100/100LL minimum grade aviation gasoline,
for alternate fuels see TCM M77-3
- 7.2 Engine Oil: in accordance with latest revision of TCM SIL99-2.

8. Fluid capacities:

- 8.1 Fuel: Total: 485 liters (128 US gal) in 2 wing tanks
Usable: 462 liters (122 US gal) in 2 wing tanks
- 8.2.Oil (per engine): Maximum: 7.6 liters (8 qts)
Minimum: 2.9 liters (3 qts)

9. Air Speeds:

Design Manoeuvring Speed, v_A (2155 kg (4750 lb))	139 KIAS
Never Exceed Speed v_{NE}	204 KIAS
Maximum Structural Cruising Speed, v_{NO}	164 KIAS
Maximum Flap Extend Speed, v_{FE}	113 KIAS
Maximum Landing Gear Operating Speed, v_{LO}	
Extension	128 KIAS
Retraction	107 KIAS
Maximum Landing Gear Extended Speed, v_{LE}	128 KIAS
Minimum Control Speed v_{MC}	66 KIAS

10. Maximum Operating Altitude: 7620 m (25,000 ft)

11. Operational Capability: VFR Day and Night
IFR Day and Night
Flight into known icing conditions (see A.V., note 11)

12. Maximum Masses:

Ramp:	2165 kg (4773 lb)
Take-Off:	2155 kg (4750 lb)
Landing:	2047 kg (4513 lb)
Max. Zero Fuel weight:	2031 kg (4479 lb)

For reduced MTOW see A.V., note 8.

13. Centre of Gravity Range (gear extended):

linear variation between given points

Weight kg (lb)	Fwd. Limit m (in) aft of datum	Aft Limit m (in) aft of datum
2155 (4750)	2.301 (90.6)	2.403 (94.6)
1928 (4250)	2.202 (86.7)	2.403 (94.6)
1542 (3400)	2.083 (82.0)	2.403 (94.6)

see also A.V. note 3

Moment change due to retracting landing gear is -32 in-lb.

14. Datum: 1.99 m (78.4") forward of the wing leading (at the inboard edge of the inboard fuel tank).

15. (Reserved)

16. Levelling Means: Two screws at the left side fuselage below window.

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: 5, for passenger seating locations see applicable AFM/POH

19. Baggage / Cargo Compartments: 84 kg (185 lb) total, thereof 45 kg (100 lb) at +0.572 m (+22.5 in) and 39 kg (85 lb) at +4.539 m (+178.7 in)
S/N 3449001 through 3449310 and 3449312 through 3449322

90 kg (200 lb) total, thereof 45 kg (100 lb) at +0.572 m (+22.5 in) and 45 kg (85 lb) at +4.539 m (+178.7 in)
S/N 3449311 and 3449323 and up

20. Wheels and Tyres:
- | | |
|---------------------------|---------------|
| 20.1 Nose Wheel Tyre Size | 6.00x6, 6 ply |
| 20.2 Main Wheel Tyre Size | 6.00x6, 8 ply |
21. (Reserved)
22. Control Surface Movements: For approved control surface deflections see applicable Airplane Maintenance Manual (A.IV.).
23. (Reserved)

A.IV. Operating and Service Instructions

Airplane Flight Manual AFM and
Pilot's Operating Handbook (POH):

- a) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1638 for Model PA-34-220T (Seneca V),
S/N 3449001 and up
- b) DOA No. SO-1 approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1649 for Model PA-34-220T (Seneca V) when Piper Kit 766-632 (MTOW 1999 kg) is installed
S/N 3449001 and up,
- c) DOA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1930 for Model PA-34-220T (Seneca V) when equipped with the factory installed Avidyne Entegra option
S/N 3449311 and 3449323 and up
- d) DOA No. 510620-CE approved Pilot's Operating Handbook and FAA approved Airplane Flight Manual Report No. VB-1955 for Model PA-34-220T (Seneca V) when equipped with the factory installed Avidyne Entegra option and when Piper Kit 766-632 (MTOW 1999 kg) is installed
S/N 3449311 and 3449323 and up

Airplane Maintenance Manual (AMM): P/N 761-888, latest approved revision

Service Bulletins and Service Letters

C.V. Notes

1. Applicable Manufacturer's S/N and certification import requirements:

- a) Basic aeroplane: S/N 3449001 and up
- b) Avidyne Entegra option: S/N 3449311 and 3449323 and up

In addition for import into EU-countries following requirements have to be met:

- PFD set-up has to be configured to display hPa (mbar) altimeter units
- Pointer type altimeters (including stand-by altimeters) have to be either factory installed or installed in accordance with an approved change, and have to have a hPa (mbar) barometric pressure setting scale.
- PFD/MFD fuel quantity and fuel flow units can be configured either in metric or US units.

2. Approved Noise Levels:

TBD (EASA noise certificate)

3. Weight and Balance:

Current Weight and Balance Report, including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

The certificated empty weight and corresponding centre of gravity locations must include undrainable system oil (not included in oil capacity) and unusable fuel as noted below:

Fuel: 16.3 kg (36.0 lb). at +2.616 m (+103.0 in)
Oil: 5.3 kg (12.0 lb). at +1.110 m (+ 43.7in)

4. Placards:

All placards required in the approved Airplane Flight Manual or Pilot's Operating Handbook and approved Airplane Flight Manual or Pilot's Operating Handbook Supplements must be installed in the appropriate location

5. Life Limitations (see also AMM, chapter 4-00-00 (P/N 761-888)):

The bolt and stack-up that connect the upper drag link to the nose gear trunnion are required to be replaced every 500 hours time-in-service. The part numbers are as follows:

- 1. Piper P/N 400 274 (AN7-35) bolt or Piper P/N 693 215 (NAS6207-50D) bolt;
- 2. Piper P/N 407 591 (AN960-716L) washer, as applicable;
- 3. Piper P/N 407 568 (AN 960-716) washer, as applicable;
- 4. Piper P/N 404 396 (AN 320-7) nut; and
- 5. Piper P/N 424 085 cotter pin.

6. Certification Basis for basic PA-34-220T (Seneca V) aeroplanes:

FAR 23 as amended by Amendment 23-6 effective August 1, 1967; FAR 23.901, 23.909, 23.1041, 23.1043, 23.1047, 23.1143, 23.1305(b)(c)(h)(p) and 23.1527 as amended by Amendment 23-7 effective September 14, 1969; FAR 23.959 as amended by Amendment 23-18 effective May 2, 1977; FAR 23.175(a), 23.201, 23.203, 23.1557(c)(1) and 23.1581 as amended by Amendment 23-21 effective March 1, 1978; FAR 23.1545(a) as amended by Amendment 23-23 effective December 1, 1978; FAR 23.1529 as amended by Amendment 23-26 effective October 14, 1980; FAR 23.1322 as amended by Amendment 23-43 effective May 10, 1993; FAR 23.207 as amended by Amendment 23-45 effective September 7, 1993; Removal of FAR 23.205 per Amendment 23-50 effective March 11, 1996; FAR 23.1305(b)(4)(ii) as amended by Amendment 23-52 effective July 25, 1996.

Compliance with the requirements of FAR 23.1419 as amended by Amendment 23-14 effective December 20, 1973, and FAR 23.1441 as amended by Amendment 23-9 effective June 17, 1970, has been established with optional ice protection provisions and optional supplemental oxygen equipment, respectively.

7. In addition to the certification basis defined in CRI-A01, latest revision, the applicable paragraphs for the factory installation of the Avidyne Entegra option are listed below. These CS requirements substitute the corresponding paragraphs of note 6.
CS-23 (basic release):
CS 23.301, 23.303, 23.305, 23.307(a), 23.337, 23.341(a), 23.395, 23.397, 23.399(a), 23.471, 23.473, 23.561(b)(3), 23.561(e), 23.601, 23.603, 23.605(a), 23.607, 23.609, 23.611, 23.613, 23.627, 23.681(a), 23.683(a), 23.683(b)(1), 23.771(a), 23.773(a)(1)(2), 23.771(b), 23.777(a), 23.777(b), 23.867(b), 23.955(a)(3), 23.1301, 23.1303, 23.1305, 23.1309, 23.1311, 23.1321, 23.1322, 23.1323, 23.1325, 23.1327, 23.1329(d), 23.1329(h), 23.1331, 23.1335, 23.1337, 23.1351(b)(1)(i), 23.1351, 23.1353(d), 23.1353(h), 23.1357, 23.1359(c), 23.1361, 23.1365, 23.1367, 23.1367(d), 23.1381(a), 23.1381(b), 23.1431, 23.1501, 23.1523, 23.1525, 23.1529, 23.1541(a), 23.1541(b), 23.1543(b), 23.1543(c), 23.1545, 23.1547, 23.1549, 23.1555, 23.1563, 23.1581, 23.1583(m), 23.1585(j), 23.1587, 23.1589

8. For operational reasons AFM/POH with a reduced MTOW are available. No physical changes to the aircraft other than additional limitation (weight and manoeuvring speed) placards are necessary for this MTOW reduction.
With Piper Kit 766-632 installed weights are as follows:
2009 kg (4430 lb). – Max. Ramp Weight
1999 kg (4407 lb). – Max Take-Off, Landing and Zero Fuel Weight

9. Operation in known icing conditions is approved if the complete optional ice protection system in accordance with the respective Piper POH/AFM-Supplement (AFM/POH Section 9) is installed and operable.

10. Type Design Definition of TCDS relevant changes:
a) Factory installed Avidyne Entegra option: New Piper report number VB-1939

Change Record

Issue 1 Initial issue to record EASA approval of Avidyne Entegra installation

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